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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CANTELMO, GREGG	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/089,109	SUHARA ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/17/04; 8/23/04; 10/25/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Information Disclosure Statements Filed

1. In response to the information disclosure statements filed March 17, 2004, August 23, 2004 and October 25,2004:

a. The restriction requirement stands;

b. The prior art rejections stand.

Election/Restrictions

2. Applicant's election with traverse of Species B in Paper No. 8 is acknowledged. The traversal is on the ground(s) that there is no lack of unity of invention and that there is no serious burden of search. This is not found persuasive because the species are clearly distinct from each other since species A has no additive element M and species B has an additive element M. Thus there is a lack of unity of invention with respect to the constituents within the composition and restriction is proper.

Considering that Species A has no additive element M, the search for Species A does not encompass the search for Species B since Species A has no additive element M and Species B does. Thus the search is in fact burdensome since the scope of search for Species A is significantly greater than the more narrow scope of Species B.

The requirement is still deemed proper and is therefore made FINAL.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Information Disclosure Statement

3. With respect to items 7-9 of the office action mailed February 24, 2003:

a. Applicant is invited to review Form PTO-892 wherein *all* of the documents cited in the International Search Report have been listed, and thus considered. Thus Applicant's request for consideration of these references is moot since the have already been considered;

b. For clarity, item 9 of the office action mailed February 24, 2003 is drawn to references which are cited in the specification, but not included in the International Search Report. An example of which was provided, JP-A 10-312805. The International Search Report did not recognize this reference, nor did Applicant cite it on an IDS statement. Therefore any of the references listed in the specification (such as JP-A 10-312805) which were not identified in the International Search Report or were not cited on Form PTO-892 have not been considered. Examiner's basis for such a position can again be found in MPEP § 609 A(1) and 37 CFR 1.98(b).

4. The information disclosure statement filed March 17, 2004 has been placed in the application file and the information referred to therein has been considered as to the merits. The information disclosure statement filed August 23, 2004 has been placed in the application file and the information referred to therein has been considered as to the merits. The information disclosure statement filed October 25, 2004 has been placed in the application file and the information referred to therein has been considered as to the merits.

5. The information submitted with a statement under 37 CFR 1.97(e) can be used in a new ground of rejection and the next Office action can be made final, if the new

ground of rejection was necessitated by amendment of the application by applicant. Where the information is submitted during this period with a fee as set forth in 37 CFR 1.17(p), the examiner may use the information submitted, and make the next Office action final whether or not the claims have been amended, provided that no other new ground of rejection which was not necessitated by amendment to the claims is introduced by the examiner. See MPEP § 706.07(a) and MPEP § 609 paragraph (B)(2).

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 2 and 7-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 10-001316 A (JP '316).

JP '316 discloses a lithium cobalt composite oxide for a lithium secondary cell (abstract), which is represented by the formula $LiCo_{1-x}M_xO_2$ wherein $0 < x < 0.25$ and M is Ti, Hf, Ta, Nb or Zr (see translation of claim 1 and paragraph [0013]). Since the prior

art product has the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in JP '316 will have the same properties as recited in instant claim 1.

As discussed above, $0 < x < 0.25$ which encompasses the range of instant claim 2 (also see paragraph [0013]0. Since the prior art product has the same the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in JP '316 will have the same properties as recited in instant claim 2.

The composition is employed as an active material in a positive electrode for a lithium secondary cell (paragraph [0040] as applied to claim 7).

The mixture comprises the active material above, an electrically conductive material and a binder supported on a current collector. The stainless steel support is the current collector (paragraph [0067] as applied to claim 8).

The stainless steel support is the current collector (paragraph [0067] as applied to claim 9).

A lithium secondary cell employs a positive electrode containing the lithium-cobalt composite oxide for a lithium secondary cell as defined in claim 1 above (paragraph [0040] as applied to claim 10).

Wherein the electrolyte solvent is a propylene carbonate, a cyclic carbonic ester (paragraph [0067] as applied to claim 11).

JP '316 discloses a lithium cobalt composite oxide for a lithium secondary cell (abstract), which is represented by the formula $LiCo_{1-x}M_xO_2$ wherein $0 < x < 0.25$ and M

is Ti, Hf, Ta, Nb or Zr (see translation of claim 1 and paragraph [0013]). Since the prior art product has the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in JP '316 will have the same properties as recited in instant claim 13.

As discussed above, $0 < x < 0.25$ which encompasses the range of instant claim 2 (also see paragraph [0013]0. Since the prior art product has the same the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in JP '316 will have the same properties as recited in instant claim 13.

With respect to the properties of the composition as recited in claims 1, 2 and 13:

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

"[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252; 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

"Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP § 2112.

With respect to the process limitations of claims 12 and 14:

Claims 12 and 14 are drawn to process limitations for fabrication of the product of claims 1 and 13, respectively. The various constituents therein have particular

particle size and specific surface area and are fired at a temperature of 850 to 1,000° C in an oxygen-containing atmosphere for a period from 4-30 hours.

These intermediate constituents while having particular average particle size and specific surface area is not clearly and linearly applicable to the end product of claim 1. The product itself claims no particular particle size or specific surface area and the process steps of claims 12 and 14 manipulate the mixture of constituents of claim 5 to form the end product of claim 1. Thus while the intermediate constituents may have particular dimensions it is not held that these dimensions are linearly applicable to the end product.

Regarding the overall process of claims 12 and 14, the prior art fabricates the same product, as discussed above. The instant application has not established that the prior art product does not anticipate or obviate the product of claim 1. Since it is the Examiner's position, based on the prior art teachings above, that the prior art product anticipates or is obvious over the product of claim 1, and there is no evidence that the process of claims 12 and 14 are critical in obtaining the product of the instant claims, the prior art is held to anticipate or render obvious the product by process limitations of claims 12 and 14.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989).

"[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

See MPEP section 2113.

Response to Arguments

9. Applicant's arguments filed May 23, 2003 have been fully considered but they are not persuasive.

Applicant argues that the prior art does not recognize the effect of x on half-width and capacity retention. This argument is not persuasive.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

Applicant's argument fails to provide clear evidence that the prior art composition does not in fact have the same properties.

Applicant argues that process conditions in claims 5 and 6 are not taught by the prior art of record and thus the prior art fails to teach the conditions set forth in claim 5 and 6.

Upon further consideration, the Examiner has withdrawn the rejection applied to claims 5 and 6. However the interpretation of claims 12 and 14 does in fact apply since the claims are drawn product by process claims.

The invention is drawn to a product. Thus the manner in which the product is formed (i.e., product-by-process) is not accorded patentable weight with respect to the product as set forth above in the rejection, incorporated herein.

While claims 12 and 14) recite particular particle size and surface area, such features are pertinent to the intermediate products used to form the final product of claims 1 and 13 and after processing are not present. Thus the end product which is the claimed invention will not exhibit the characteristic dimensions of the intermediate constituents recited in claims 12 and 14 and thus not accorded patentable weight.

Arguments presented in the appeal brief are discussed in the Examiner's Answer mailed December 23, 2003, incorporated herein.

Claim Rejections - 35 USC § 103

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '316 in view of U.S. patent No. 5,709,969 (Yamihira).

The teachings of claim 1, with respect to JP '316, have been discussed above and are incorporated herein. The International Search Report PCT/ISA/210 and the International Preliminary Examination Report PCT/ISA/409 both appear to indicate that claim 4 lacks novelty, and would therefore appear to be anticipated by this reference. However there is no explicit disclosure of the packing density of this product and

packing density can vary in a given composition due to the pressing of the mixture and therefore is not held to be taught by JP '316.

The difference between claim 4 and JP '316 is that JP '316 does not disclose of the positive electrode having a packing density from 2.90- 3.35 g/cm^3.

If the characteristics of the positive electrode are taken into account, the volumetric density of the sintered mass is preferably 2.0 to 4.3 g/ml. If the volumetric density is lower than this range, the energy density cannot be improved sufficiently. Conversely, if the volumetric density of the sintered mass surpasses this range, the electrolyte solution is lowered in impregnating characteristics and in the charging/discharging characteristics. Thus it is preferred to set the pressure for compression molding so that the volumetric density of the sintered mass will be in a range of from 2.0 to 4.3 g/ml and desirably in a range of from 2.5 to 4.0 g/ml (paragraph bridging columns 3 and 4).

In an example LiCoO2 has a packing density of 3.1 g/ml (3.1 g/cm^3 col. 6, ll. 61-63). This specific example is a data point within the instant claim range. Furthermore the range of Yamihira 2.0-4.3 g/ml encompasses the range of 2.90-3.35 g/cm^3. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990).

The motivation for providing a density within a range of 2.5 to 4.0 g/ml such as 3.1 g/ml is to optimize the energy density of the electrode, the electrolyte solution

impregnation characteristics of the electrode and the charging and discharging characteristics of the electrode and cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '316 by providing a packing density in the range of 2.90-3.35 g/cm^3 since it would have optimized the energy density of the electrode, the electrolyte solution impregnation characteristics of the electrode and the charging and discharging characteristics of the electrode and cell. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche , 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Response to Arguments

11. Applicant's arguments filed May 23, 2003 have been fully considered but they are not persuasive.

Applicant argues that the method of producing the product of Yamahira is different from the instant application. This argument is not persuasive, first because the claims are drawn to a product and product-by-process and not exclusive to the process. Second Applicant fails to persuasively argue why it would not have been obvious to modify the primary reference in view of Yamahira.

Thus the rejection stands.

Applicant argues that the combination would not result in the claimed invention due to the what Applicant alleges are the deficient teachings in the primary reference.

The arguments to the primary reference rejection have been rebutted above and the prior art primary reference is still held to teach the claimed invention. Since the primary reference is still applicable to the claims as set forth above, and there is no persuasive argument for withdrawing the combination of the primary reference in view of Yamahira, the combination is held to obviate the teachings of claim 4.

Arguments presented in the appeal brief are discussed in the Examiner's Answer mailed December 23, 2003, incorporated herein.

Claim Rejections - 35 USC § 102/103

12. Claims 1, 2, 7 and 10-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. patent No. 5,147,738 (Toyoguchi).

Toyoguchi discloses a hexagonal (col. 2, ll. 1-8) lithium cobalt composite oxide for a lithium secondary cell (abstract), which is represented by the formula $LiCo_{1-x}M_xO_2$ wherein x =0.02 and M is Ti (see Table 4 wherein Y=0.02 and x=1.0). Since the prior art product has the same lattice structure and the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in Table 4 will have the same properties as recited in claim 1.

As discussed above, x=0.02. Since the prior art product has the same lattice structure and the same elemental and stoichiometric composition as that of the instant

claims, there is a reasonable expectation that the composite oxide in Table 4 will have the same properties as recited in claim 2.

The composition is employed as an active material in a positive electrode for a lithium secondary cell (abstract as applied to claim 7).

A lithium secondary cell employs a positive electrode containing the lithium-cobalt composite oxide for a lithium secondary cell as defined in claim 1 above (abstract as applied to claim 10).

Wherein the electrolyte solvent is a cyclic or chain carbonic ester (col. 3, ll. 11-15 as applied to claim 11).

Toyoguchi discloses a hexagonal (col. 2, ll. 1-8) lithium cobalt composite oxide for a lithium secondary cell (abstract), which is represented by the formula $LiCo_{1-x}M_xO_2$ wherein x =0.02 and M is Ti (see Table 4 wherein Y=0.02 and x=1.0). Since the prior art product has the same lattice structure and the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in Table 4 will have the same properties as recited in claim 13.

As discussed above, x=0.02. Since the prior art product has the same lattice structure and the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide in Table 4 will have the same properties as recited in claim 13.

With respect to the properties of the composition as recited in claims 1, 2 and 13:

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

"[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

"Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP § 2112.

With respect to the process limitations of claims 12 and 14:

Claims 12 and 14 are drawn to process limitations for fabrication of the product of claims 1 and 13, respectively. The various constituents therein have particular particle size and specific surface area and are fired at a temperature of 850 to 1,000° C in an oxygen-containing atmosphere for a period from 4-30 hours.

These intermediate constituents while having particular average particle size and specific surface area is not clearly and linearly applicable to the end product of claim 1. The product itself claims no particular particle size or specific surface area and the process steps of claims 12 and 14 manipulate the mixture of constituents of claim 5 to form the end product of claim 1. Thus while the intermediate constituents may have particular dimensions it is not held that these dimensions are linearly applicable to the end product.

Regarding the overall process of claims 12 and 14, the prior art fabricates the same product, as discussed above. The instant application has not established that the prior art product does not anticipate or obviate the product of claim 1. Since it is the Examiner's position, based on the prior art teachings above, that the prior art product

anticipates or is obvious over the product of claim 1, and there is no evidence that the process of claims 12 and 14 are critical in obtaining the product of the instant claims, the prior art is held to anticipate or render obvious the product by process limitations of claims 12 and 14.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989).

"[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed

and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

See MPEP section 2113.

Response to Arguments

13. Applicant's arguments filed May 23, 2003 have been fully considered but they are not persuasive.

Applicant argues that the cathode active material of the prior art is not the same and does not have the same properties as recited in the claims because the starting materials are different. This argument is not persuasive.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product,

apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

Applicant's argument fails to provide clear evidence that the prior art composition does not in fact have the same properties.

Applicant argues that process conditions in claims 5 and 6 are not taught by the prior art of record and thus the prior art fails to teach the conditions set forth in claim 5 and 6.

Upon further consideration, the Examiner has withdrawn the rejection applied to claims 5 and 6. However the interpretation of claims 12 and 14 does in fact apply since the claims are drawn product by process claims.

The invention is drawn to a product. Thus the manner in which the product is formed (i.e., product-by-process) is not accorded patentable weight with respect to the product as set forth above in the rejection, incorporated herein.

While claims 12 and 14) recite particular particle size and surface area, such features are pertinent to the intermediate products used to form the final product of claims 1 and 13 and after processing are not present. Thus the end product which is the claimed invention will not exhibit the characteristic dimensions of the intermediate constituents recited in claims 12 and 14 and thus not accorded patentable weight.

Arguments presented in the appeal brief are discussed in the Examiner's Answer mailed December 23, 2003, incorporated herein.

Claim Rejections - 35 USC § 103

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoguchi in view of U.S. patent No. 5,709,969 (Yamihira).

The teachings of claim 1, with respect to Toyoguchi, have been discussed above and are incorporated herein.

The difference between claim 4 and Toyoguchi is that Toyoguchi does not disclose of the positive electrode having a packing density from 2.90- 3.35 g/cm^3.

If the characteristics of the positive electrode are taken into account, the volumetric density of the sintered mass is preferably 2.0 to 4.3 g/ml. If the volumetric density is lower than this range, the energy density cannot be improved sufficiently. Conversely, if the volumetric density of the sintered mass surpasses this range, the electrolyte solution is lowered in impregnating characteristics and in the charging/discharging characteristics. Thus it is preferred to set the pressure for compression molding so that the volumetric density of the sintered mass will be in a range of from 2.0 to 4.3 g/ml and desirably in a range of from 2.5 to 4.0 g/ml (paragraph bridging columns 3 and 4).

In an example LiCoO2 has a packing density of 3.1 g/ml (3.1 g/cm^3 col. 6, ll. 61-63). This specific example is a data point within the instant claim range. Furthermore the range of Yamihira 2.0-4.3 g/ml encompasses the range of 2.90-3.35 g/cm^3. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990).

The motivation for providing a density within a range of 2.5 to 4.0 g/ml such as 3.1 g/ml is to optimize the energy density of the electrode, the electrolyte solution impregnation characteristics of the electrode and the charging and discharging characteristics of the electrode and cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Toyoguchi by providing a packing density in the range of 2.90-3.35 g/cm^3 since it would have optimized the energy density of the electrode, the electrolyte solution impregnation characteristics of the electrode and the charging and discharging characteristics of the electrode and cell. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche , 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Response to Arguments

15. Applicant's arguments filed May 23, 2003 have been fully considered but they are not persuasive.

Applicant argues that the method of producing the product of Yamahira is different from the instant application. This argument is not persuasive, first because the claims are drawn to a product and product-by-process and not exclusive to the process. Second Applicant fails to persuasively argue why it would not have been obvious to modify the primary reference in view of Yamahira.

Thus the rejection stands.

Applicant argues that the combination would not result in the claimed invention due to the what Applicant alleges are the deficient teachings in the primary reference.

The arguments to the primary reference rejection have been rebutted above and the prior art primary reference is still held to teach the claimed invention. Since the primary reference is still applicable to the claims as set forth above, and there is no persuasive argument for withdrawing the combination of the primary reference in view of Yamahira, the combination is held to obviate the teachings of claim 4.

Arguments presented in the appeal brief are discussed in the Examiner's Answer mailed December 23, 2003, incorporated herein.

Claim Rejections - 35 USC § 103

16. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoguchi in view of U.S. patent No. 5,702,843 (Mitate).

The teachings of claims 1 and 7, with respect to Toyoguchi, have been discussed above and are incorporated herein.

The differences between claims 8 and 9 and Toyoguchi are that Toyoguchi does not disclose of a current collector provided to support the cathode mixture (claim 8) or the current collector being aluminum or stainless steel (claim 9).

With respect to claim 8:

Toyoguchi discloses of the positive electrode material is a mixture of the active material, an electrically conductive material (acetylene black) and a binder resin (paragraph bridging columns 2 and 3).

A current collector may be used to facilitate the transfer of electrons to/from the electrode. A material for the collector is not particularly limited, but the collector may be formed of a mono-element metal, an alloy, a carbon material or the like. Examples of specific materials for the collector include titanium, iron, nickel, copper, aluminum, stainless steel, and copper, aluminum and stainless steel materials coated with carbon, nickel, titanium, silver or the like, and those materials surface-treated for oxidation (Mitate, col. 4, ll. 45-59).

The motivation for providing a current collector is that it facilitates electron transfer to and from the electrode.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Toyoguchi by providing a current collector since it would have facilitated electron transfer to and from the electrode.

With respect to claim 9:

A material for the collector is not particularly limited, but the collector may be formed of a mono-element metal, an alloy, a carbon material or the like. Examples of specific materials for the collector include titanium, iron, nickel, copper, aluminum,

stainless steel, and copper, aluminum and stainless steel materials coated with carbon, nickel, titanium, silver or the like, and those materials surface-treated for oxidation (Mitate, col. 4, ll. 45-59). The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) See also In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

The motivation for selecting the current collector to be stainless steel or aluminum that it would have provided a cathode support which has good electrical conductivity but does not undergo chemical change in the battery.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Toyoguchi by selecting the current collector to be stainless steel or aluminum since it would have provided a cathode support which has good electrical conductivity but does not undergo chemical change in the battery.

Response to Arguments

17. Applicant's arguments filed May 23, 2003 have been fully considered but they are not persuasive.

Applicant argues that the combination would not result in the claimed invention due to the what Applicant alleges are the deficient teachings in the primary reference.

The arguments to the primary reference rejection have been rebutted above and the prior art primary reference is still held to teach the claimed invention. Since the primary reference is still applicable to the claims as set forth above, and there is no

persuasive argument for withdrawing the combination of the primary reference in view of Mitate, the combination is held to obviate the teachings of claim 4.

Arguments presented in the appeal brief are discussed in the Examiner's Answer mailed December 23, 2003, incorporated herein.

Double Patenting

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 1-2, 7, 10 and 12-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-13 of copending Application No. 10/296,205. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Copending Application No. 10/296,205 claims a lithium cobalt composite oxide for a lithium secondary cell (abstract), which is represented by the formula $LiCo_{1-x}M_xO_2$ wherein $0 \leq x \leq 0.7$ and M is Ti, Hf, Ta, Nb or Zr (claims 1 and 8 and paragraph [0013]). Since the prior art product has the same elemental and stoichiometric composition as

that of the instant claims, there is a reasonable expectation that the composite oxide will have the same properties as recited in instant claims 1 and 13.

As discussed above, $0 < x < 0.25$ which encompasses the range of instant claim 2 (also see paragraph [0013]0. Since the prior art product has the same the same elemental and stoichiometric composition as that of the instant claims, there is a reasonable expectation that the composite oxide will have the same properties as recited in instant claim 2.

The composition is employed as an active material in a positive electrode for a lithium secondary cell (claims 14 and 15 as applied to claim 7).

A lithium secondary cell employs a positive electrode containing the lithium-cobalt composite oxide for a lithium secondary cell as defined in claim 1 above (claims 1, 8 and 14-15 as applied to claim 10).

With respect to the properties of the composition as recited in claims 1, 2 and 13:

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic.

Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

"[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

"Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP § 2112.

With respect to the process limitations of claims 12 and 14:

Claims 12 and 14 are drawn to process limitations for fabrication of the product of claims 1 and 13, respectively. The various constituents therein have particular particle size and specific surface area and are fired at a temperature of 850 to 1,000° C in an oxygen-containing atmosphere for a period from 4-30 hours.

These intermediate constituents while having particular average particle size and specific surface area is not clearly and linearly applicable to the end product of claim 1. The product itself claims no particular particle size or specific surface area and the process steps of claims 12 and 14 manipulate the mixture of constituents of claim 5 to form the end product of claim 1. Thus while the intermediate constituents may have particular dimensions it is not held that these dimensions are linearly applicable to the end product.

Regarding the overall process of claims 12 and 14, the prior art fabricates the same product, as discussed above. The instant application has not established that the prior art product does not anticipate or obviate the product of claim 1. Since it is the Examiner's position, based on the prior art teachings above, that the prior art product anticipates or is obvious over the product of claim 1, and there is no evidence that the process of claims 12 and 14 are critical in obtaining the product of the instant claims, the prior art is held to anticipate or render obvious the product by process limitations of claims 12 and 14.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-

process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989).

"[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then

obtain prior art products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

See MPEP section 2113.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

20. Claim 4 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8-14 of Copending Application No. 10/296,205 in view of Yamihira.

The teachings of claim 1, with respect to Copending Application No. 10/296,205, have been discussed above and are incorporated herein.

The difference between claim 4 and Toyoguchi is that Toyoguchi does not disclose of the positive electrode having a packing density from 2.90- 3.35 g/cm^3.

If the characteristics of the positive electrode are taken into account, the volumetric density of the sintered mass is preferably 2.0 to 4.3 g/ml. If the volumetric density is lower than this range, the energy density cannot be improved sufficiently. Conversely, if the volumetric density of the sintered mass surpasses this range, the electrolyte solution is lowered in impregnating characteristics and in the charging/discharging characteristics. Thus it is preferred to set the pressure for compression molding so that the volumetric density of the sintered mass will be in a range of from 2.0 to 4.3 g/ml and desirably in a range of from 2.5 to 4.0 g/ml (paragraph bridging columns 3 and 4).

In an example LiCoO2 has a packing density of 3.1 g/ml (3.1 g/cm^3 col. 6, ll. 61-63). This specific example is a data point within the instant claim range. Furthermore the range of Yamihira 2.0-4.3 g/ml encompasses the range of 2.90-3.35 g/cm^3. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990).

The motivation for providing a density within a range of 2.5 to 4.0 g/ml such as 3.1 g/ml is to optimize the energy density of the electrode, the electrolyte solution impregnation characteristics of the electrode and the charging and discharging characteristics of the electrode and cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Copending Application No. 10/296,205 by providing a packing density in the range of 2.90-3.35 g/cm^3 since it would have optimized the energy density of the electrode, the electrolyte solution impregnation characteristics of the electrode and the charging and discharging characteristics of the electrode and cell. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche , 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

This is a provisional obviousness-type double patenting rejection.

21. Claims 8, 9 and 11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 8-14 of Copending Application No. 10/296,205 in view of JP '316.

The teachings of claim 1, with respect to Copending Application No. 10/296,205, have been discussed above and are incorporated herein.

The differences between claims 8, 9 and 11 and Copending Application No. 10/296,205 are that Copending Application No. 10/296,205 does not claim the current collector (claims 8 and 9) or the electrolyte solvent.

JP '316 discloses of:

The mixture comprises the active material above, an electrically conductive material and a binder supported on a current collector. The stainless steel support is the current collector (paragraph [0067] as applied to claim 8).

The stainless steel support is the current collector (paragraph [0067] as applied to claim 9).

Wherein the electrolyte solvent is a propylene carbonate, a cyclic carbonic ester (paragraph [0067] as applied to claim 11).

Both stainless steel current collectors (claims 8 and 9) and the electrolyte solvents recited in claim 11 are known materials in the art. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) See also In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

This is a provisional obviousness-type double patenting rejection.

22. Claims 12-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 5 of copending Application No. 10/743,479. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 1 of copending Application No. 10/743,479 and instant claim 13 are obvious over each other considering the difference between the two is the scope of the range of x. And while the scope is slightly different, the bulk of the range of each claim is identical.

Claims 5 and 14 of copending Application No. 10/743,479 is a process of making the composite oxide of claim 1. Instant claims 12 and 14 is a product-by-process of the lithium oxide of claim 1 wherein the product and process of forming the product in claims 12 and 14 is identical in scope with the process and product defined in claim 5 of copending Application No. 10/743,479.

The copending application was not made of record prior to the finality of the previous final office action. While the disclosure of the copending application was made of record within 3 months of the filing of the copending application, the timeliness of

23. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in

scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

24. Claims 1-11 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-11 of copending Application No. 10/743,479. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The claims in the instant application and the copending application identified herein are identical in scope and are the same invention.

The copending application was not made of record prior to the finality of the previous final office action. While the disclosure of the copending application was made of record within 3 months of the filing of the copending application, the timeliness of filing still permits finality of this office action.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (703) 305-0635. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (703) 308-2383. FAX communications should be sent to the appropriate FAX number: (703) 872-9311 for After Final Responses only; (703) 872-9310 for all other responses. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gregg Cantelmo
Patent Examiner
Art Unit 1745

PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER

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January 5, 2005